REMARKS

INTRODUCTION

In accordance with the foregoing, claims 19, 21 and 32-37 have been amended. No new matter is submitted.

Claims 19-26 and 28-37 are pending and under consideration.

OBJECTION TO CLAIM 37

Claim 37 stands objected to for including a typographical error.

With this typographical error having been corrected, withdrawal of this objection is respectfully requested.

REJECTION UNDER 35 USC 102

Claims 19-21, 25-26 and 28-35 stand rejected under 35 USC § 102(b) as being anticipated by Furukawa et al., U.S. Patent No. 6,345,026. This rejection is respectfully traversed.

It is respectfully submitted that Furukawa et al. fails to disclose at least "a generator to control generation of a write pulse waveform in accordance with a grouping table having width data of first and/or last pulses for the write pulse waveform according to the magnitude of the present mark of the input data and the magnitudes of the leading and/or trailing spaces, with the magnitude of the present mark and magnitudes of the leading and/or trailing spaces being grouped according to a short pulse group, a middle pulse group *and* a long pulse group," as recited in independent claim 19. The remaining independent claims include similar allowable features, with differing scope and breadth.

As illustrated in FIGS. 5-7, the present application sets forth a differing invention compared to the prior art, e.g., Furukawa et al., with the simplification of width tables used for controlling the generation of write pulse waveforms.

As set forth in the present application, on page 4, "the magnitudes of the leading and trailing spaces and the magnitude of the present mark may range from 3T to 14T. There can be more than 1,000 possible combinations. Thus, circuits or memories for obtaining the amounts of shift in rising edges of the first pulses and falling edges of the last pulses are necessary with respect to all cases, which complicates the system and hardware. Therefore, in the present invention, the magnitudes of the present marks and leading and trailing spaces of input NRZI data are grouped into a short pulse group, a middle pulse group and a long pulse group and the

grouped magnitudes of the present mark and the leading and trailing spaces are used."

Further, as recited on page 6 of the specification, "FIG. 4 illustrates grouping of input NRZI data, showing two examples of grouping. In the first example, if a low grouping pointer is 3 and a high grouping pointer is 12, then the mark of a short pulse group is 3T, the marks of a middle pulse group are from 4T to 11T and the mark of a long pulse group is 14T. In the second example, if a low grouping pointer is 4 and a high grouping pointer is 11, then the marks of a short pulse group are 3T and 4T, the marks of a middle pulse group are 5T to 10T and the marks of a long pulse group are 11T and 14T. As described above, since both the low grouping pointer and the high grouping pointer are used, utility efficiency is enhanced. Also, grouping can be performed differently for the respective zones."

Thus, independent claims all include the requirement of a short pulse group, a middle pulse group, and a long pulse group. As different widths fall into one of these different groupings the resultant grouping table does not have to be overly large, e.g., it doesn't have to account for all 1,000+ possible combinations.

Conversely, Furukawa et al., in Tables I and II, illustrates only two real potential ranges, short or long or short and middle(depending on how the tables are interpreted), for the corresponding system of Furukawa et al., i.e., although the present invention details that long widths exist beyond 11T, Furukawa et al. would only appear to illustrate 11T being the greatest width and 3T being the minimum width. Tables I and II of Furukawa et al. would only appear to illustrate the variances between 3T, 4T and some range between 3-5T and 11T.

Thus, at most, Furukawa et al. would only appear to illustrate the use to two groups, low and low-through-high, e.g. 3 or 4T or 3T, 4T, or 5T through 11T.

In Furukawa et al., although there is a underlying simplification of the width table system, it would not appear that the Furukawa et al. simplified table system is based on the aforementioned claimed short, middle, and long pulse system of the present invention, i.e., Furukawa et al. has simplified the table according to 3T, 4T and some range between 3-5T and 11T. The underlying simplification methods are different.

Thus, as all independent claims include the aforementioned short, middle, and long pulse groupings, it is respectfully submitted that the independent claims are patentably distinguishable over Furukawa et al.

It is also noted that the Office Action indicates that Furukawa et al. discloses the claimed varying of a falling edge of a first pulse and second pulse of a write pulse, e.g., independent claims 32 and 33, while Furukawa et al. would not appear to control the falling edge of pulses, but rather would only appear to control the leading edges of pulses by delaying the

corresponding pulses. See FIGS. 2 and 4, for example.

Therefore, for at least the above, it is respectfully requested that this rejection of the independent claims be withdrawn and the independent claims be allowed. For at least similar rationale, it is respectfully submitted that the dependent claims are also allowable.

REJECTION UNDER 35 USC 103

Claims 22, 24 and 36 stand rejected under 35 USC § 103(a) as being obvious over Furukawa et al., in view of Hara, U.S. Patent No. 6,044,055. Claims 23 and 27 stand rejected under 35 USC § 103(a) as being obvious over Furukawa et al., in view of Nishiuchi et al., U.S. Patent No. 5,568,461. These rejections are respectfully traversed.

It is respectfully submitted that claims 22-24, 27 and 36 are allowable at least for depending from allowable independent claims. In addition, it is respectfully submitted that the none of Furukawa et al., Hara, nor Nishiuchi et al., alone or in combination, disclose or suggest the aforementioned allowable features of the independent claims.

Therefore, for at least the above, it is respectfully requested that this rejection of claims 22-24, 27 and 36 be withdrawn and claims 22-24, 27 and 36 be allowed.

CONCLUSION

There being no further outstanding objections or rejections, it is submitted that the application is in condition for allowance. An early action to that effect is courteously solicited.

Finally, if there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters.

If there are any additional fees associated with filing of this Amendment, please charge the same to our Deposit Account No. 19-3935.

Respectfully submitted,

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